until after 4 p. m., but not so violent. According to Mr. Squirrell, other vessels in the vicinity also reported having felt the shocks.

Notwithstanding the gales referred to, the month as a whole was a quiet one, as would be expected from the advance of the season. This was particularly true of the southern part of the ocean. Mr. N. G. A. Parker, observer on the British S. S. *Nile*, Capt. C. H. Cross, states in his report:

551.506(73)

We left Yokohama on May 1 for Honolulu, taking the northern route or Great Circle track, 3,394 miles, and had an exceptionally fine passage, arriving at Honolulu on the morning of the 12th. I should say the month of May was ideal for such route.

Another interesting note is by Mr. G. Clarke, second officer and observer on the British S. S. *Empress of Japan*, Capt. W. Dixon Hopcroft, Yokohama for Vancouver (May 26–June 6). Mr. Clarke states that during the entire voyage the winds were from S. to NE., no westerlies.

WEATHER OF THE MONTH IN THE UNITED STATES.

In general.—The outstanding feature of the month was the anticyclonic control which persisted until the 20th. The anticyclones most influential in this regard had their origin in the Canadian Northwest; associated with their slow movement toward the east-southeast there was a drift of air from higher to lower latitudes and unseasonably cool days during the first half of the month. During the last half higher temperatures prevailed so that the month as a whole in New England, the Lake region, the great interior valleys, the Plains States and the West Gulf States, was one of temperature above the normal. Precipitation was deficient over the same identical regions, also in the north Pacific coast States. It was greater than the average in Atlantic coast districts from Cape Cod to Florida, also in Southern California and generally over the middle and southern plateau regions.

An event of more than passing interest was the severe magnetic storm of the 13th–17th. This storm was accompanied by distrubances of the magnetic and electrical conditions over a large portion of the earth and brilliant auroral displays. A brief summary of the distribution of the auroral display will appear in the June REVIEW.—*A. J. H.*

CYCLONES AND ANTICYCLONES.

By W. P. DAY, Observer.

Lows, as a rule, were ill defined and erratic in movement. Offshoots from the subpermanent low pressure area in the Southwest were frequent.

High pressure areas were numerous, but with one or two exceptions avoided interior districts, being more effective in Atlantic coast sections.

Tables showing the number of HIGHS and LOWS by types follow:

Lows.

	Alberta.	North Pacific.	South Pacific.	Northern Rocky Mountain.	Colorado.	Texas.	East Gulf.	South Atlantic.	Central.	Total.
May, 1921	2.0	1.0	4.0	2.0	1.0	1.0	1.0	.....	1.0	13.0
Average number, 1892–1912, inclusive	2.9	1.3	1.2	0.7	1.4	0.7	0.2	0.3	1.0	9.7

Highs.

	North Pacific.	South Pacific.	Alberta.	Plateau and Rocky Mountain region.	Hudson Bay.	Total.
May, 1921	3.0	1.0	5.0	.....	2.0	11.0
Average number, 1892–1912, inclusive	1.3	0.5	3.3	0.7	0.9	6.7

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

[Weather Bureau, Washington, D. C., July 1, 1921.]

PRESSURE AND WINDS.

The atmospheric pressure exhibited two distinct types during the month and sharply contrasted weather conditions were the result.

During the first half of the month the pressure was persistently high along the northern border from the Rocky Mountains eastward, the so-called Polar Front extending well into the upper Mississippi Valley during the first few days, and, gradually drifting eastward, extending its influence into the Atlantic coast districts, where it diminished somewhat in force and near the end of the first decade gave signs of dissipating. However, early in the second decade, high pressure again became effective in the Northeastern States and Canadian Maritime Provinces, gradually extending southeast into the Atlantic and becoming central near the Bermudas by the middle of the month. During this period a second high-pressure area had moved into the upper Missouri Valley, and it too passed eastward over about the same course as that first mentioned. Upon reaching the Atlantic coast, however, it slowly settled to the southward, and near the beginning of the last decade of the month had become established over the Southeastern States with a corresponding movement of warm air from the south into the central valleys and thence eastward, where cool, northerly winds had prevailed so continuously during the earlier part of the month.

Low-pressure areas were usually ill-defined and few of them traversed long distances as well-developed storms. The average pressure for the month was highest over the Great Lakes and lowest in the far Southwest. In the districts east of the Rocky Mountains the average pressure was nearly everywhere greater than normal although usually the departures were less than one-tenth inch. Between the Rocky Mountains and Pacific coast, pressure averaged less than normal as a rule; although local areas in the valley of the Colorado River and along the immediate coast had departures slightly above normal.

High winds during the month were usually associated with thunderstorms only and hence were largely local and covered comparatively small areas, although about the first of the month high winds occurred over southern New England and along the middle Atlantic coast, and again about the 4th and 5th over the same districts.

The persistence of high pressure in the Great Lake region caused northerly winds over much of the Ohio Valley, Middle Gulf, and Atlantic Coast States, but between the Mississippi River and Rocky Mountains the wind was mainly from some southerly quadrant, and this was the case also in much of the Plateau region. In the far Northwest and generally along the Pacific coast the winds were from northerly to westerly points.